DFD

Creating Data Flow Diagrams

Steps:

1. Create a list of activities
2. Construct Context Level DFD
   (identifies external entities and processes)
3. Construct Level 0 DFD
   (identifies manageable sub process)
4. Construct Level 1- n DFD
   (identifies actual data flows and data stores)
5. Check against rules of DFD

DFD Naming Guidelines

- External Entity → Noun
- Data Flow → Names of data
- Process → verb phrase
  - a system name
  - a subsystem name
- Data Store → Noun

Creating Data Flow Diagrams

Lemonade Stand Example

Creating Data Flow Diagrams

Example

The operations of a simple lemonade stand will be used to demonstrate the creation of dataflow diagrams.

Steps:

1. Create a list of activities
   - Old way: no Use-Case Diagram
   - New way: use Use-Case Diagram
2. Construct Context Level DFD
   (identifies sources and sink)
3. Construct Level 0 DFD
   (identifies manageable sub processes)
4. Construct Level 1- n DFD
   (identifies actual data flows and data stores)

Creating Data Flow Diagrams

Example

Think through the activities that take place at a lemonade stand.

1. Create a list of activities

Customer Order
Serve Product
Collect Payment
Produce Product
Store Product

Creating Data Flow Diagrams

Example

Also think of the additional activities needed to support the basic activities.

1. Create a list of activities

Customer Order
Serve Product
Collect Payment
Produce Product
Store Product
Order Raw Materials
Pay for Raw Materials
Pay for Labor

Creating Data Flow Diagrams

Example

Group these activities in some logical fashion, possibly functional areas.

1. Create a list of activities

Customer Order
Serve Product
Collect Payment

Produce Product
Store Product

Order Raw Materials
Pay for Raw Materials

Pay for Labor

Creating Data Flow Diagrams

Example

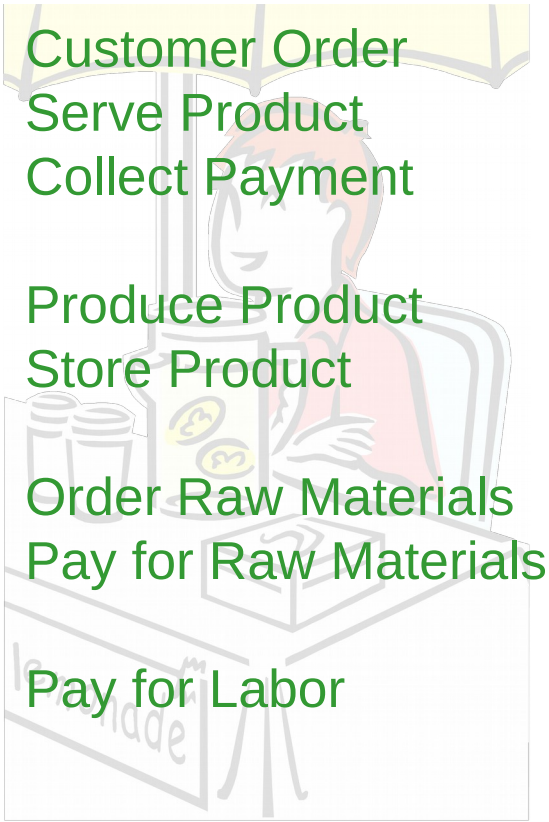
Create a context level diagram identifying the sources and sinks (users).

Customer Order
Serve Product
Collect Payment

Produce Product
Store Product

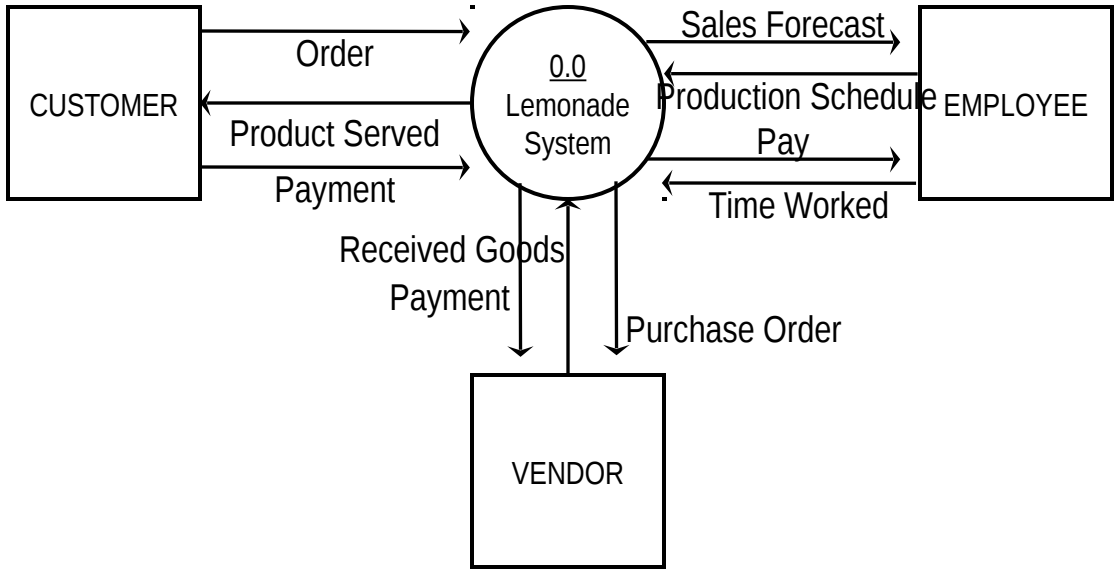
Order Raw Materials
Pay for Raw Materials

Pay for Labor



2. Construct Context Level DFD (identifies sources and sink)

Context Level DFD



Creating Data Flow Diagrams

Example

Create a level 0 diagram identifying the logical subsystems that may exist.

Customer Order
Serve Product
Collect Payment

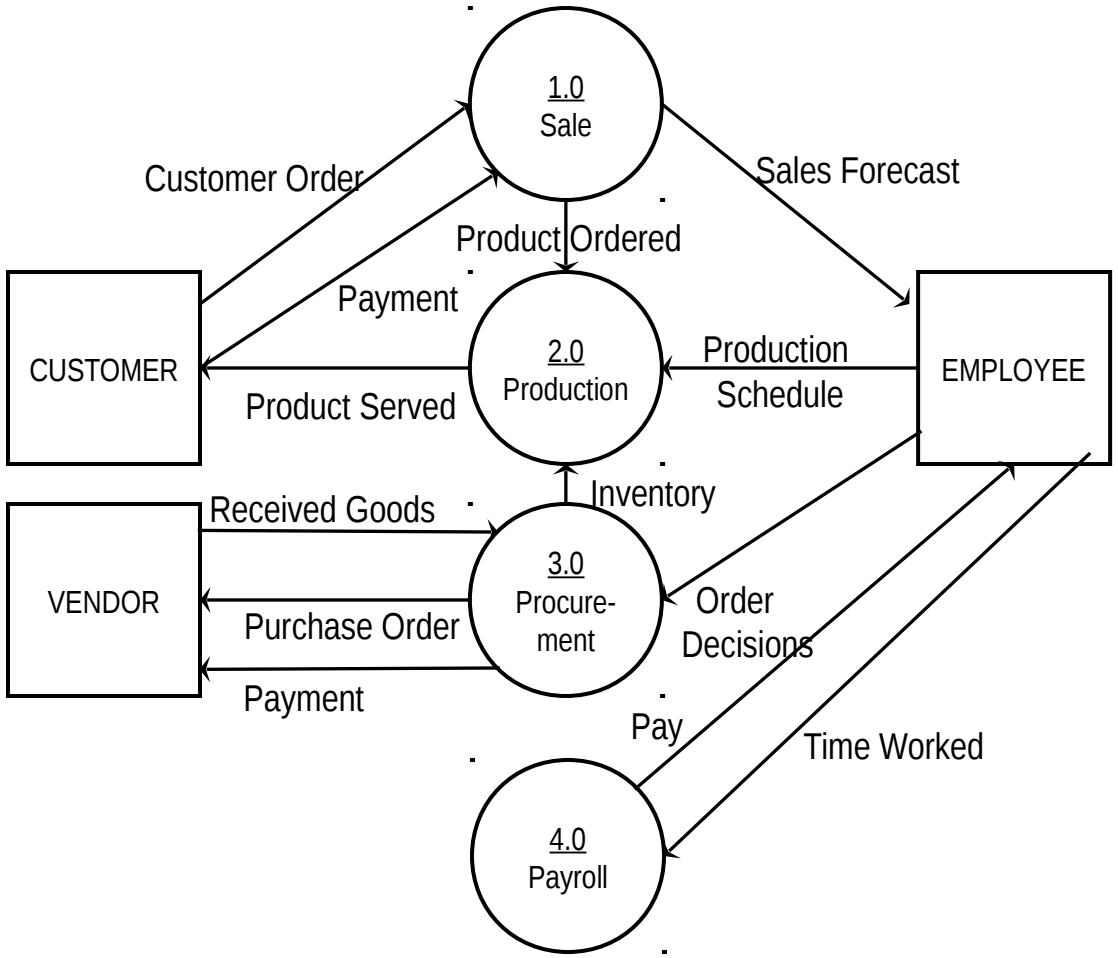
Produce Product
Store Product

Order Raw Materials
Pay for Raw Materials

Pay for Labor

3. Construct Level 0 DFD
(identifies manageable sub processes)

Level 0 DFD



Creating Data Flow Diagrams

Example

Create a level 1 decomposing the processes in level 0 and identifying data stores.

Customer Order
Serve Product
Collect Payment

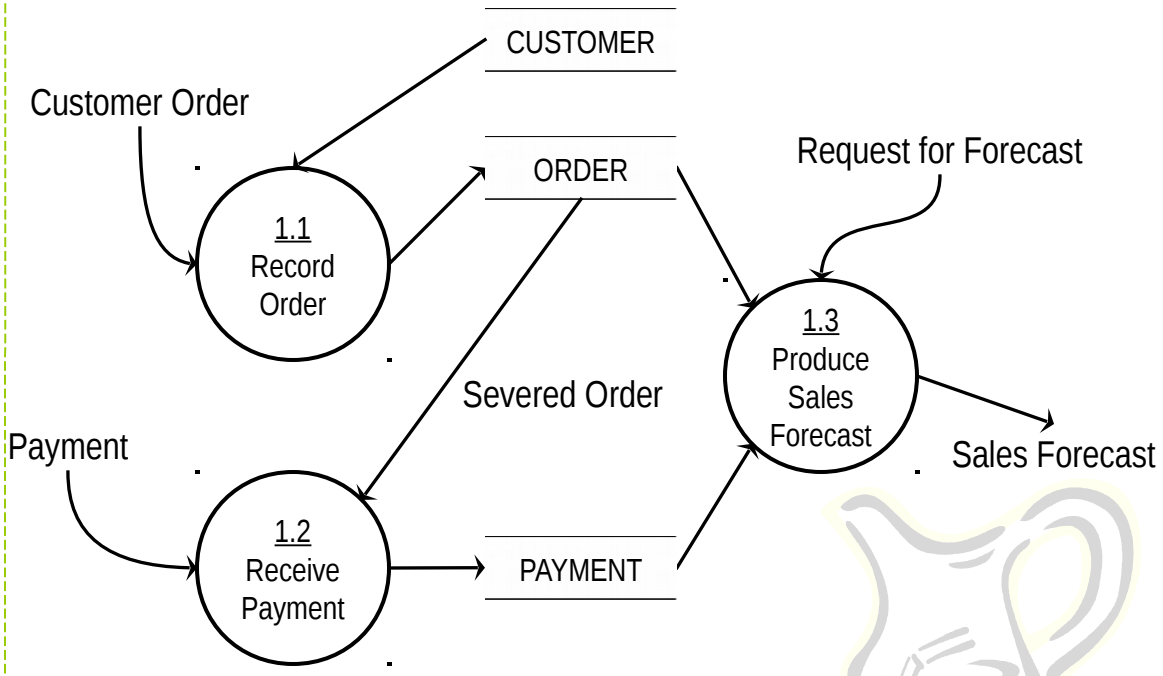
Produce Product
Store Product

Order Raw Materials
Pay for Raw Materials

Pay for Labor

4. Construct Level 1- n DFD
(identifies actual data flows and data stores)

Level 1 DFD



Creating Data Flow Diagrams

Example

Create a level 1 decomposing the processes in level 0 and identifying data stores.

Customer Order
Serve Product
Collect Payment

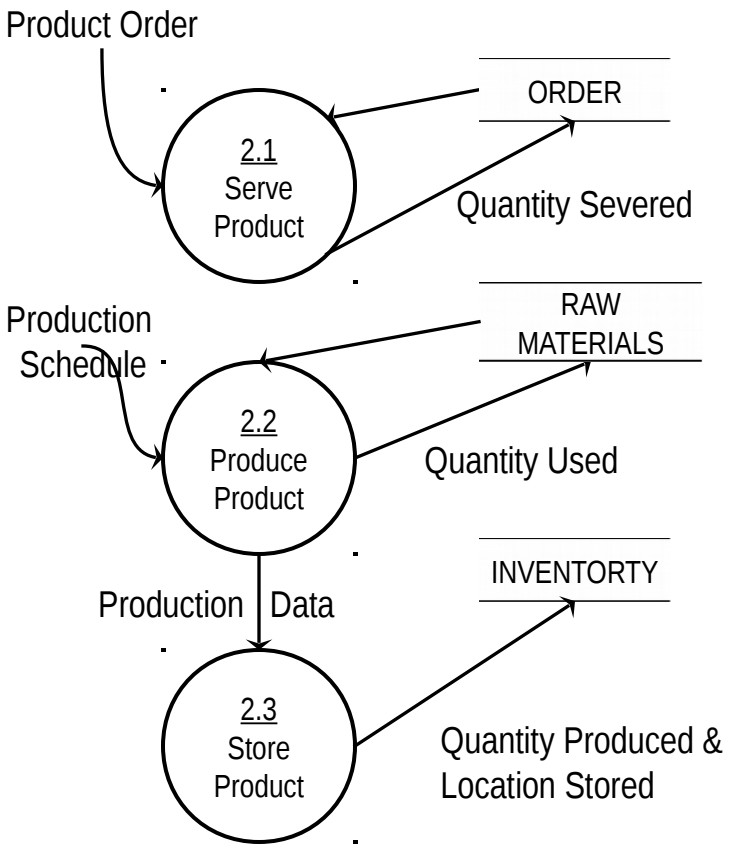
Produce Product
Store Product

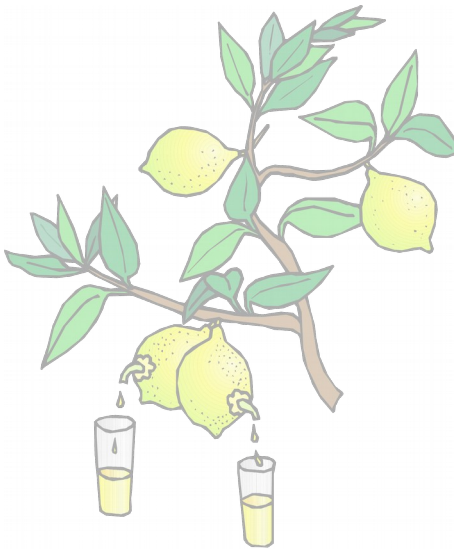
Order Raw Materials
Pay for Raw Materials

Pay for Labor

4. Construct Level 1 (continued)

Level 1 DFD





Creating Data Flow Diagrams

Example

Create a level 1 decomposing the processes in level 0 and identifying data stores.

Customer Order
Serve Product
Collect Payment

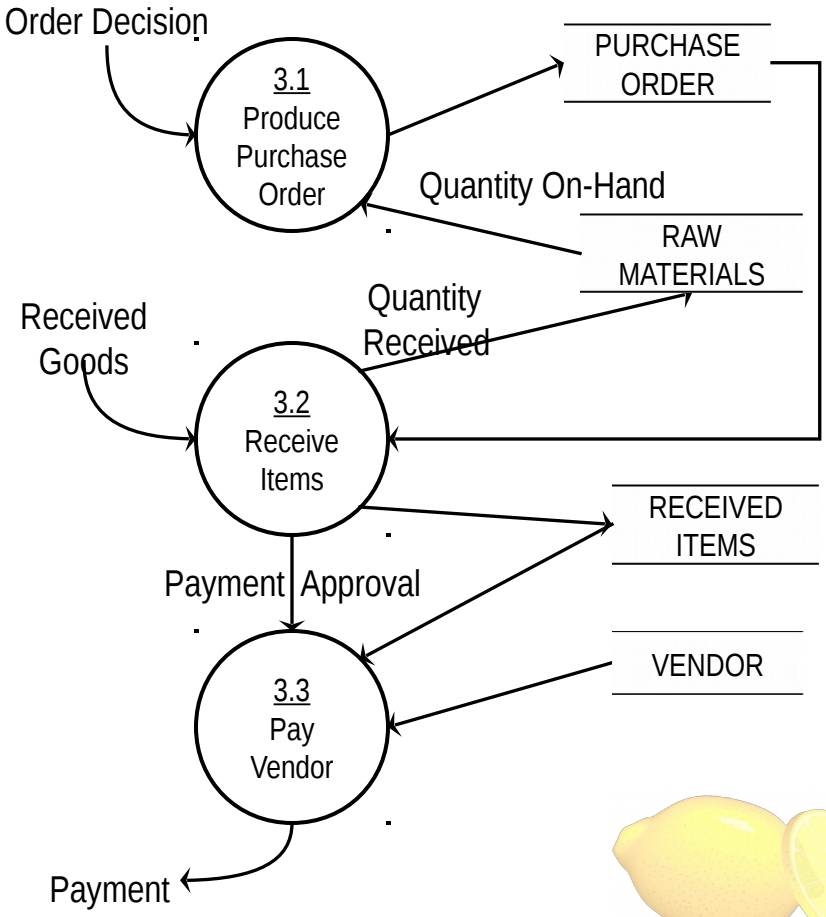
Produce Product
Store Product

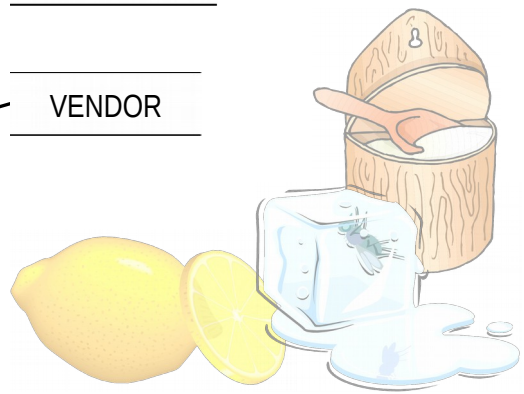
Order Raw Materials
Pay for Raw Materials

Pay for Labor

4. Construct Level 1 (continued)

Level 1 DFD





Creating Data Flow Diagrams

Example

Create a level 1 decomposing the processes in level 0 and identifying data stores.

Customer Order
Serve Product
Collect Payment

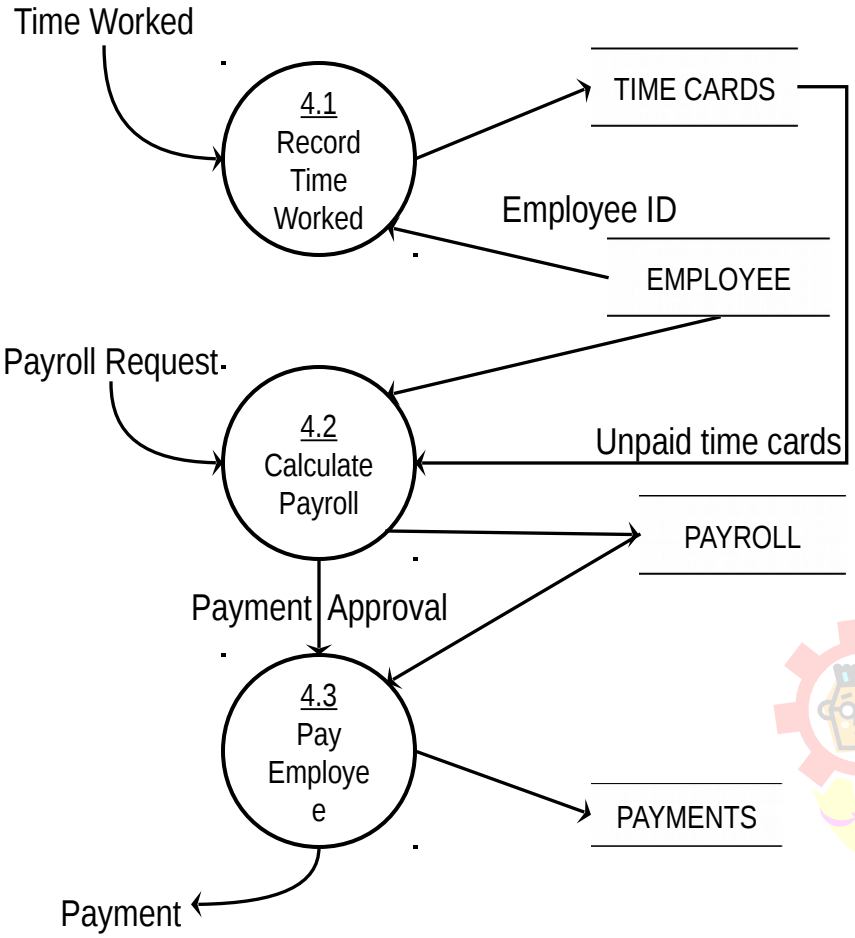
Produce Product
Store Product

Order Raw Materials
Pay for Raw Materials

Pay for Labor

4. Construct Level 1 (continued)

Level 1 DFD



Process Decomposition